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Ministry
of the
Environment

FACTS

FOR ENVIRONMENTAL STUDIES

IT'S NOT ALL GARBAGE

GARBAGE

It has been around for a long time -- ever since Adam threw the first applecore over his shoulder -- and it is here to stay.

At first it didn't matter. If your doorway became too littered with unwanted scraps, you could move to a new neighborhood. Or if you lived in early Troy, you just added a new storey to your home and moved upstairs to rise above the waste mounting around the house.

Nowadays we know better. Moldering garbage attracts rodents and other pests and can create serious health hazards.

Many cities have chosen to bury their garbage in sanitary landfill sites -- dumps with a big difference. Soil is spread over each layer of garbage at carefully regulated intervals, thus reducing any sanitary or aesthetic concerns. Eventually, the area can be turned into a ski hill, park or some other leisure time facility.

This method has two drawbacks. First, it eliminates the possibility of using that land either for agriculture or for building. Secondly, it prevents us from recycling the materials which contain some of our valuable renewable or non-renewable resources.

Incineration is the second most popular garbage disposal method. But again, we lose land in disposing of ashes; we burn and discard material resources and we create another environmental problem -- air pollution.

Money is always a factor when considering sound waste management practices. In Canada, the average resident produces four pounds of garbage a day and pays roughly \$25.00 a year through taxes to have it collected.

We have to do something.

Government Programs

The Ontario Government has several projects under way which fit together into a comprehensive waste management program. The Watts from Waste project in Mississauga, for example, will burn garbage and produce steam to run electric generators.

The Ministry of the Environment's new experimental plant at the Ontario Centre for Resource Recovery in Downsview, is designed to receive up to 800 tons of garbage a day from Metropolitan Toronto. The plant mechanically separates garbage into such commodities as paper, glass, ferrous and non-ferrous metals and compost for research and reuse. This program tests the effectiveness of new separation equipment and processes and contributes to the development of stable markets for recycled products.

In addition, Environment Ontario is also working with industry to reduce the production and use of disposable products and containers such as throwaway soft drink bottles.



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But waste management begins in the home and can not be left completely up to the government.

By practicing the four R's of waste management -- reduce, reclaim, reuse and recycle -- in our homes, school and offices, we can save ourselves money, help to preserve our natural resources and protect our environment.

Give it a try. Join the Waste Watchers.

THE FOUR R's

The following is a list of waste watching activities which can be easily carried out in the classroom or about the school yard. Space has been provided so that you can add your own ideas.

Reduce waste by:

- using a lunch pail instead of a paper bag
- avoiding disposable plates, cups and cutlery
- using one straw or napkin instead of two
- writing on both sides of the page
- buying one book or magazine and sharing
- avoiding excessive wrapping of lunch food
- buying pop in refillable bottles and taking them back to the store for your deposit refund
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Reuse:

- plastic grocery bags to carry lunches, books, sweaters, etc.
- that pencil; sharpen it -- don't throw it away when it gets dull
- alcan foil used in wrapping sandwiches
- twist ties
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Recycle:

- use a garbage can only for material which can't be recycled
- set up a special container in every room for unwanted paper products
- do the same for metal and glass products; put them in convenient places, such as in the lunchroom or near a softdrink machine
- take the refillable bottles back to the store
- take all paper, metal and non-returnable glass products to a recycling depot
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Reclaim:

- large glass jugs; they can be used for terrariums and closed ecosystems
- coathangers; add cheesecloth and you have an excellent sample collecting net
- plastic serving containers for jam; they can hold small field samples
- grass cuttings, food waste, etc; build a compost pit
- milk cartons; they're ideal for hanging plants, storage containers and file boxes
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LEARNING ABOUT WASTE: ACTIVITIES FOR STUDENTS

The following are some of the activities on waste that can be used by the teacher in the classroom.

Have People Been Here: On an undeveloped portion of the school grounds, students should show "three kinds of direct or indirect evidence that people have been there". Encourage originality. Most students will choose litter as direct evidence. List as many examples as possible.

The Cost of Litter: Studies on maintenance costs along roadsides and parks have shown that it cost \$.35 each to pick up every bottle, can or piece of paper. Send your class around the school grounds collecting litter. Return and compute how much money your class saved taxpayers.

Litter Survey: Have your class determine where litter barrels should be placed on the campus. One method for this survey starts with a clean-up day. Pick up all campus litter. Then remove all litter barrels from the campus for two days. Have your students make a litter survey and indicate on a campus map areas containing the most litter. Place the litter barrels in these areas. Clean up any litter that was found at the end of the two-day period. Check the campus periodically for new "litter hot-spots" and place barrels in these areas.

Paint a Can: Trash cans are almost as unsightly as the litter put into them. Divide your class into small groups. Give each group a trash can, some brushes, and paints, in several colors. Have a trash can decorating contest. Involve the entire school by letting them vote for the trash can of their choice. Distribute the cans throughout the campus. Allow the students to make a litter survey of the campus. This will help them place the cans in the most needed areas.

Trash Collage: Have your class collect from the campus. Allow the students to select pieces of the collected trash and construct a collage. The collage can be mounted on plywood, beaverboard, or masonite for a permanent classroom display. The resulting "pop art" can be titled, "Pollution -- Is it Necessary?" Dispose of the rest of the trash in a suitable way.

Litter Scavenger Hunt: Compile a list of common litter items of the school ground for a scavenger hunt (against time). List items such as 10 cigarette butts, 5 flip-off tops, 2 milk cartons, 1 cigarette pack, 1 bubble gum wrapper, etc. A survey walk of the school grounds should present ideas for the items listed.



Make Your Own Paper: Tear up a piece of used paper into small pieces, add water, starch. Mix with an egg beater. Pour onto a screen. Let dry. Then iron.

Litter Run: Take your class outdoors and divide into two teams. The object of the race is to see which team can pick up the most litter in the shortest time. When the signal is given, the first person in each team must collect three pieces of litter and then run back to his team. The litter must be deposited in a garbage bag. Once the first person has completed his task, number two in line must collect three pieces of litter, and so on. The first team to finish is the winner. The races may be varied by having students hop on one foot, skip, or walk sideways.

Sanitary Landfill Site: Take a large glass jar and fill it with moist soil. Bury the following objects in it so they can be seen from the side: a paper clip, newspaper, plastic, food -- apple or orange peel. Explain this is the one way solid waste is handled. Periodically over the next few weeks, examine the jar and make a chart to display your findings.

The Natural History of an Earth Species: Before giving students any further information on the activity, instruct each student to collect three pieces of litter from the school grounds. Tell them they will be used for an activity in the classroom, but give them no further direction. Have them spread all three pieces before them on their desks. Now inform them that each student is a space scientist who has landed on a strange planet. The planet is in one of its long night periods which might last many earth weeks. Observation is impossible due to darkness. Your ship's Robots have scanned the area and returned with only the three pieces of litter you have before you. The three items have indicated to you that there is life on the planet. Problem: Each student should concern himself with his own three pieces of litter. Assuming no more information than the litter provides, draw as many conclusions as to the size of the species; what they might look like; what they eat, drink; where they live; what is their level of intelligence; do they have eyes, and, if so, would rods or cones dominate? (Color in litter indicates cones and, therefore, activity principally during daylight.) Finding a coke can might indicate many things from the types of metals on the planet, etc. What would the contents of the can be used for? Consider if all the material is from the same species or many species.

Remind students that, based on the three pieces of litter they have, it would be correct to form deductions that, although logical, they know to be false. Once each "space scientist" has drawn his fullest amount of deductions, based on his three pieces of litter, he should formally present them (as if at a formal seminar) to the class, who would represent a gathering of leading scientists back on Earth. The class (scientists) should critically challenge the deductions and the speaker should be prepared to support them. The use of a podium and microphone will aid in formalizing presentations.

Recycling: Print each of the following words on a file card: soil, buds, roots, green leaves, trunk, dead leaves and branches. Distribute each of the seven to seven children and ask them to arrange themselves in the proper order of growth. Secret: they must stand in a circle.